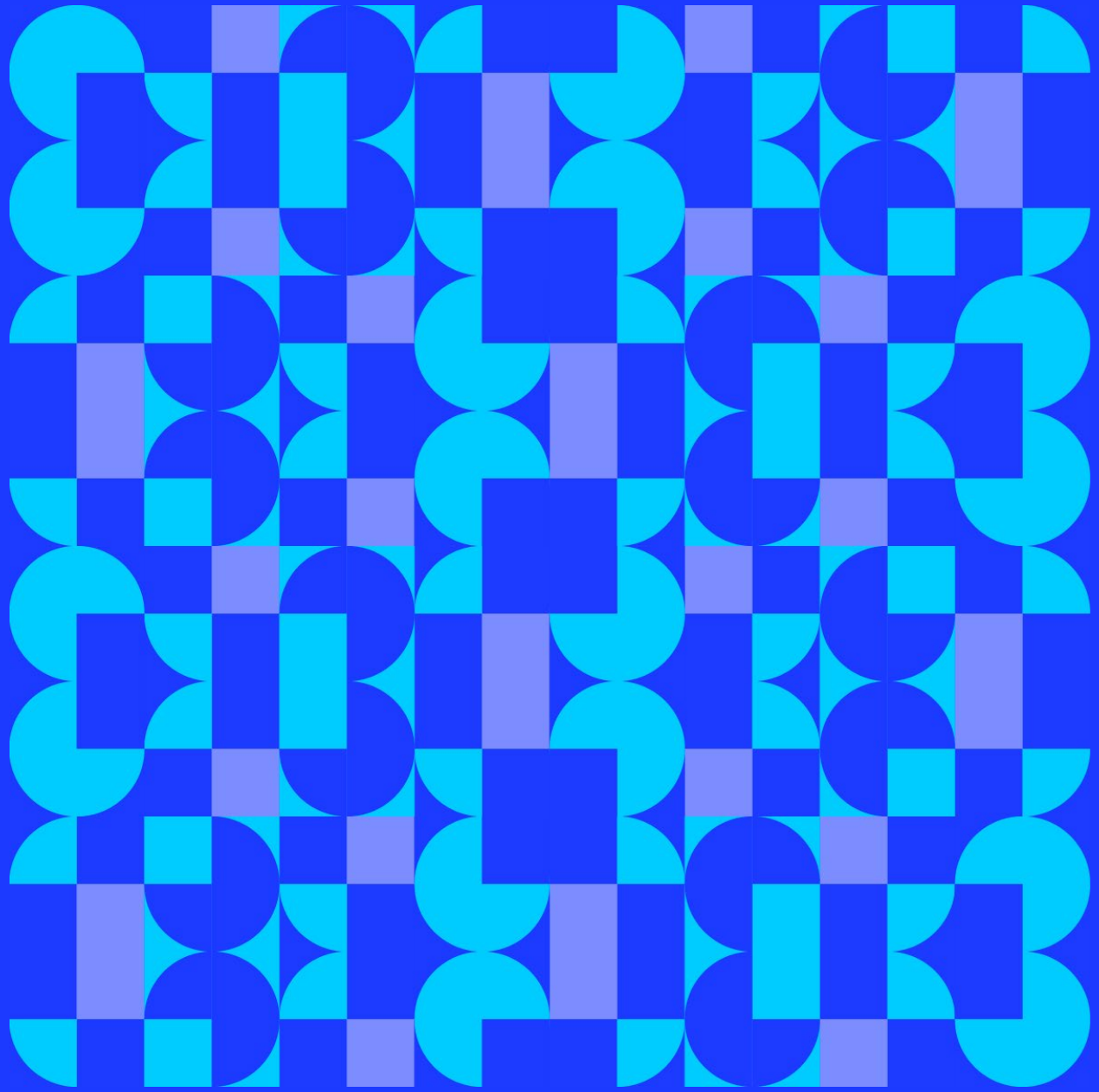
beopen

ATTICA pilot

Creating a “Shield” from natural disasters for Attica region’s citizen and environment

CERTH
NOA



Pilot Attica – Storytelling & Challenges

CHALLENGES

1) Climate change amplifies the vulnerability and consequences of wildfires

2) Wildfires paradox

Negative: loss of life, pollution, harm to human assets, and social impacts.

Positive: clearance of organic material, enhanced soil fertility, and the removal of invasive species.

3) Technology has proven invaluable

DIGITAL SERVICE

Near real time fire detection with social media (DS1):
Fire Event Detection and monitoring of fire-related geolocated posts referring to the same incident using location and time.

HVD

1. Historical Fires
2. Social Media Related to Fires
3. Social Media Events related to Fires
4. Predicted Fire Danger Levels Using EFFIS
5. Copernicus Data Space Ecosystem Satellite

INTENDED IMPACT

1) **Goal**: Utilizing crowdsourced technology for the event detection of wildfires.
2) **Focus**: Examine social media content and derive valuable insights
3) **Objectives**:
   - Identification ignition points
   - Evaluating fire intensity
   - Indirectly estimating the potential extent of fire propagation
4) **Benefit**:
   - Effective allocation of resources for firefighting efforts
   - Providing near real-time information

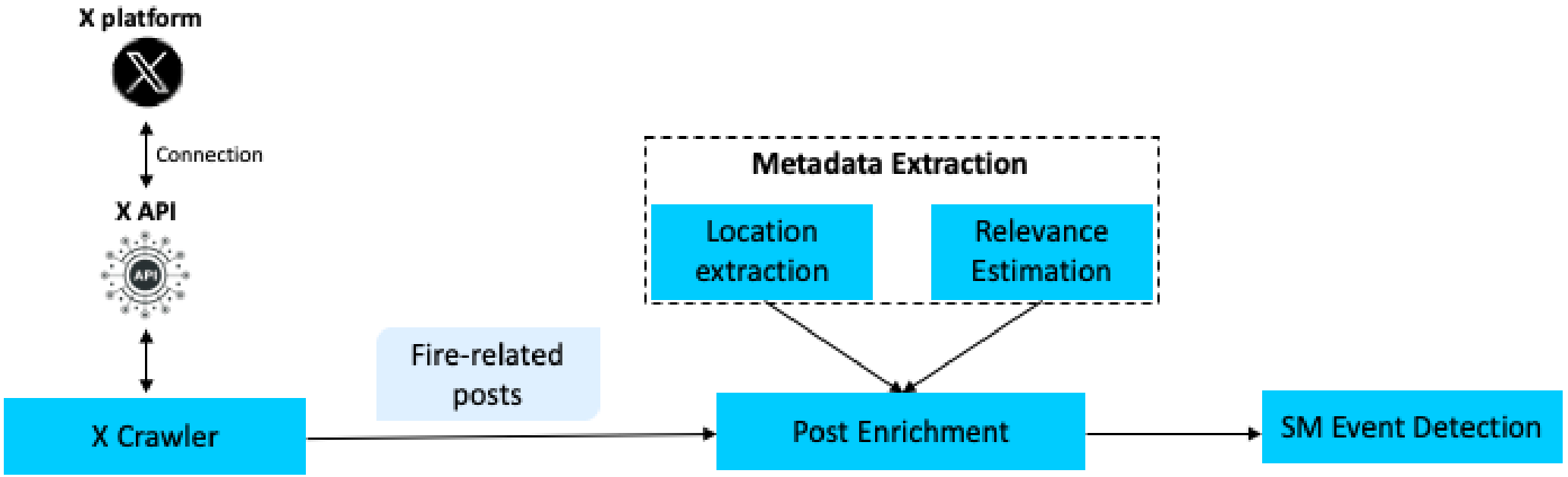
Pilot Attica – Used HVDs

- HVDs identified and improved

Dataset	Use	Score Baseline	Score Achieved
Historical Fires Dataset	Validation role for DS, Visualisation	34%	85%
Social Media Posts Related to Fires	Development of DS	34%	90%
Social Media Events related to Fires	Visualisation	34%	90%
Predicted Fire Danger Levels Using EFFIS Data	Supporting Role	34%	90%
Copernicus Data Space Ecosystem Satellite Data	Verification	39%	90%

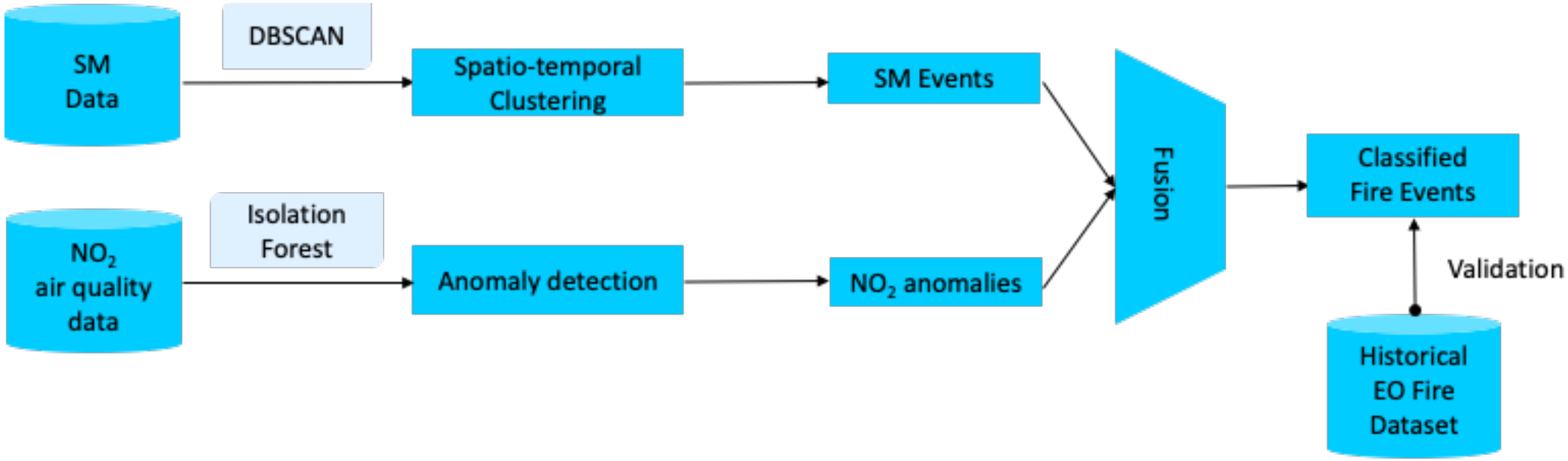
Pilot Attica – Performed activities

- Social Media Event Detection Module



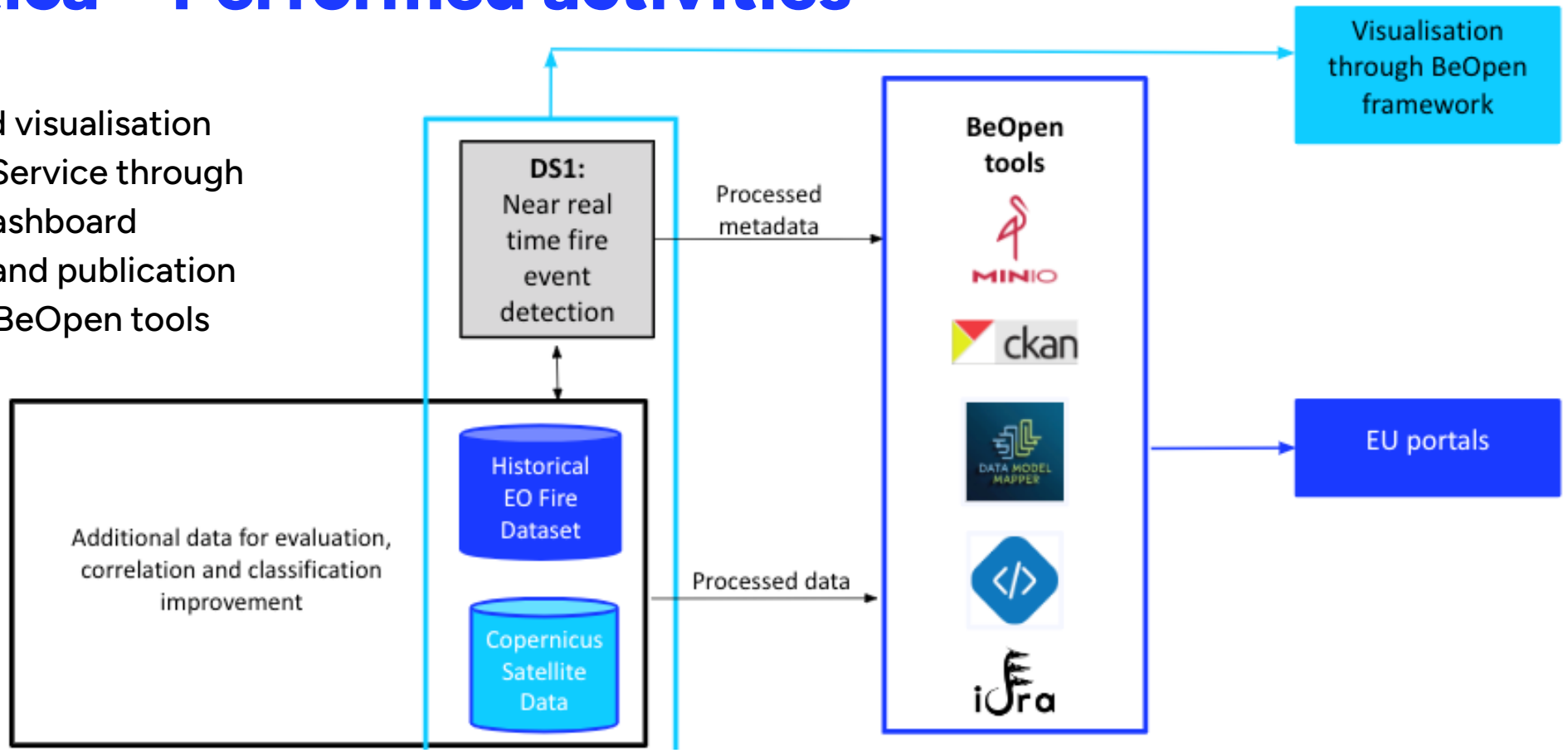
Pilot Attica – Performed activities

- Fire Event Detection through late fusion analysis



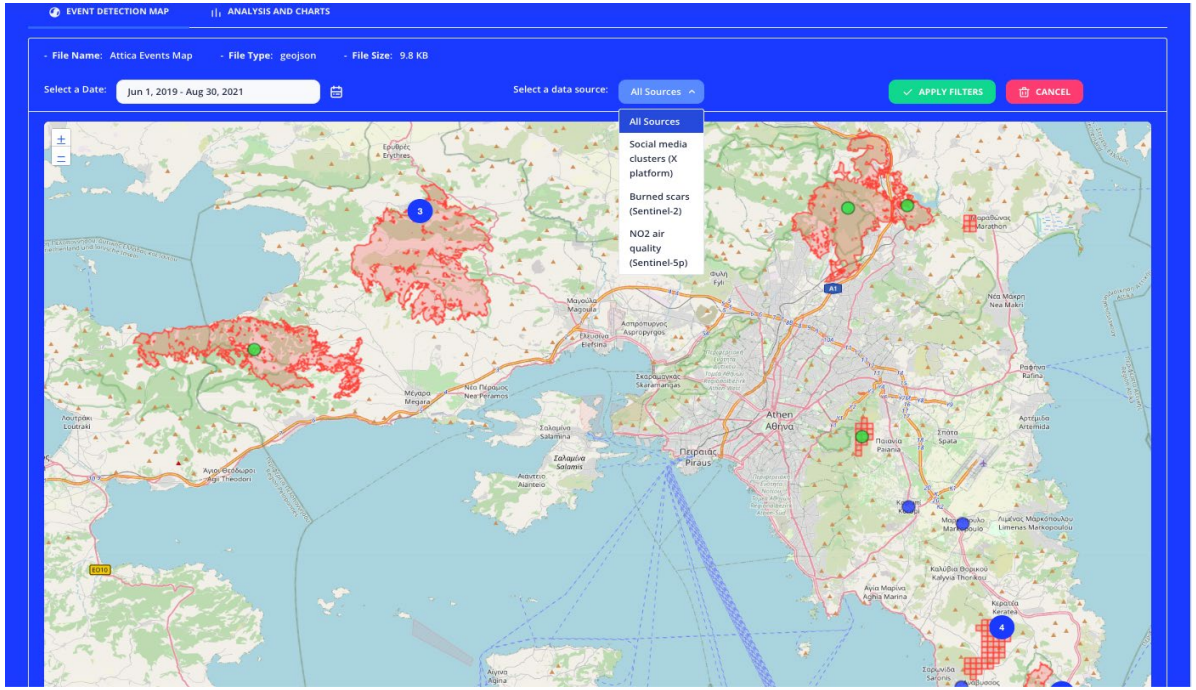
Pilot Attica – Performed activities

- Integration and visualisation of the Digital Service through the BeOpen dashboard
- Improvement and publication of HVDs using BeOpen tools

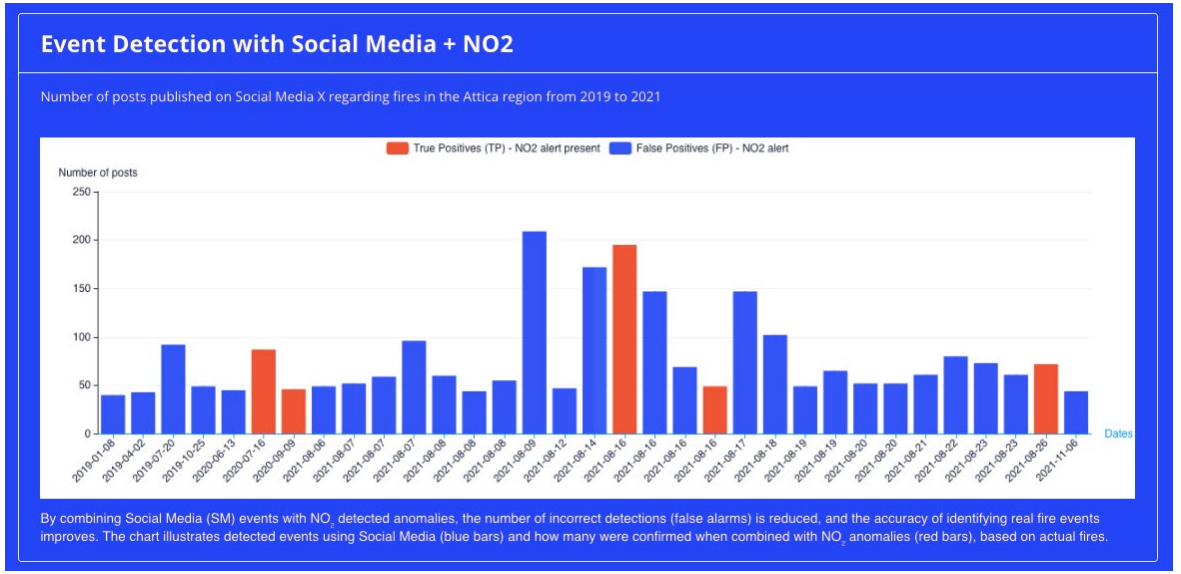


Pilot Attica – Achieved Results

- Event detection map



- Analysis and charts

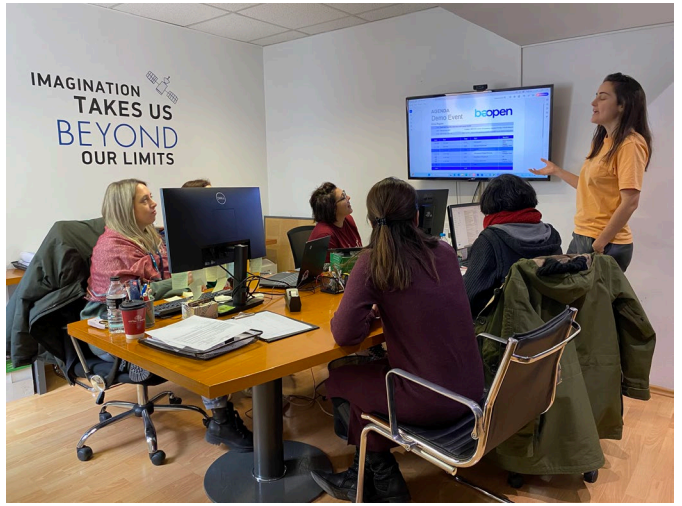


- NO2 alone is unreliable due to many false alarms
- SM alone is more precise than NO2 but still misses fires
- SM + NO2 fusion reduces false alarms
- SM enables early fire alerts while NO2 enhances detection reliability

Pilot Attica – Stakeholder involvement

Stakeholders:

- Civil Protection Authority of Region of Attica
- Firefighters
- Volunteers - Hellenic Rescue Team
- EDGE in Earth Observation Sciences SME



Engagement activities:

Activity	Description
Surveys	Development of surveys
Internal analysis of BeOpen metrics	Analysis of quantitative information to help measure KPI
Meetings	Meetings with end-users

Pilot Attica – Lessons learnt

- Co-Design with End-Users is Critical for Adoption: Early and continuous end-user involvement is essential to ensure tools are not only technically sound but also practically useful
- Social Media Platforms are a Valuable but Fragile Data Source: Future systems must avoid overreliance on single platforms and develop diversified, resilient data acquisition strategies.
- Modular Architecture Enables Flexibility Across Contexts: Design with scalability and adaptability in mind, enabling modular reuse in various domains and locations.
- Multi-Source Data Fusion Increases Accuracy and Timeliness: Future systems should prioritize hybrid data models, leveraging both real-time citizen input and authoritative satellite data for situational awareness.

Pilot Attica – New approach after adopting BeOpen?

From Static to Dynamic Risk Assessment

- Before: Risk assessments were static, relying on historical data.
- After: The system uses near-real-time EO and in-situ data to assess evolving threats dynamically—enabling adaptive risk mitigation.

From Centralized to Citizen-Driven Monitoring

- Before: Public involvement was minimal, with top-down information flows.
- After: Crowdsourcing platforms and social media analysis enable bottom-up, citizen-driven contributions, improving responsiveness and coverage—especially in remote or fast-evolving situations.

Thank you!

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